

TAB B



Combined Sewer Final Overflows—Guidance for Financial Capability Assessment and Schedule Development

I. INTRODUCTION

Background

Combined sewer systems (CSSs) are wastewater collection systems designed to carry sanitary sewage (consisting of domestic, commercial and industrial wastewater) and storm water (surface drainage from rainfall or snow melt) in a single pipe to a treatment facility. CSSs serve about 43 million people in approximately 1,100 communities nationwide. Most of these communities are located in the Northeast and Great Lakes regions. During dry weather, CSSs convey domestic, commercial, and industrial wastewater. In periods of rainfall or snow melt, total wastewater flows can exceed the capacity of the CSS and/or treatment facilities. When this occurs, the CSS is designed to overflow directly to surface water bodies, such as lakes, rivers, estuaries, or coastal waters. These overflows - called combined sewer overflows (CSOs) - can be a major source of water pollution in communities served by CSSs.

Because CSOs contain untreated domestic, commercial, and industrial wastes, as well as surface runoff, many types of contaminants can be present. Contaminants may include pathogens, oxygen-demanding pollutants, suspended solids, nutrients, toxics, and floatable matter. Because of these contaminants and the volume of the flows, CSOs can cause a variety of adverse impacts on the physical characteristics of surface water, impair the viability of aquatic habitats, and pose a potential threat to drinking water supplies. CSOs have been shown to be a major contributor to use impairment and aesthetic degradation of many receiving waters and have contributed to shellfish harvesting restrictions, beach closures, and even occasional fish kills.

History of the CSO Control Policy

Historically, the control of CSOs has proven to be extremely complex. This complexity stems partly from the difficulty in quantifying combined sewer overflow (CSO) impacts on receiving water quality and the site specific variability in the volume, frequency, and characteristics of CSOs. In addition, the financial considerations for communities with CSOs can be significant. The U.S. Environmental Protection Agency (EPA) estimates the CSO abatement costs for the 1,100 communities served by CSSs to be approximately \$41.2 billion.

To address these challenges, EPA's Office of Water issued a National Combined Sewer Overflow Control Strategy on August 10, 1989 (54 *Federal Register* 37370). This Strategy reaffirmed that CSOs are point source discharges subject to National Pollutant Discharge Elimination System (NPDES) permit requirements and Clean Water Act (CWA) requirements.

The CSO Strategy recommended that all CSOs be identified and categorized according to their status of compliance with these requirements. It also set forth three objectives:

- Ensure that if CSOs occur, they are only as a result of wet weather
- Bring all wet weather CSO discharge points into compliance with the technology-based and water quality-based requirements of the CWA
- Minimize the impacts of CSOs on water quality, aquatic biota, and human health.

In addition, the CSO Strategy charged all States with developing state-wide permitting strategies designed to reduce, eliminate, or control CSOs.

Although the CSO Strategy was successful in focusing increased attention on CSOs, it fell short in resolving many fundamental issues. In mid-1991, EPA initiated a process to accelerate implementation of the Strategy. The process included negotiations with representatives of the regulated community, State regulatory agencies, and environmental groups. These negotiations were conducted through the Office of Water Management Advisory Group. The initiative resulted in the development of a CSO Control Policy, which was published in the *Federal Register* on April 19, 1994 (59 *Federal Register* 18688). The intent of the CSO Control Policy is to:

- Provide guidance to permittees with CSOs, NPDES permitting and enforcement authorities, and State water quality standards (WQS) authorities
- Ensure coordination among the appropriate parties in planning, selecting, designing, and implementing CSO management practices and controls to meet the requirements of the CWA
- Ensure public involvement during the decision-making process.

The CSO Control Policy contains provisions for developing appropriate, site-specific NPDES permit requirements for all CSSs that overflow due to wet weather events. It also announces an enforcement initiative that requires the immediate elimination of overflows that occur during dry weather and ensures that the remaining CWA requirements are complied with as soon as possible.

Key Elements of the CSO Control Policy

The CSO Control Policy contains four key principles to ensure that CSO controls are cost-effective and meet the requirements of the CWA:

- Provide clear levels of control that would be presumed to meet appropriate health and environmental objectives
- Provide sufficient flexibility to municipalities, especially those that are financially disadvantaged, to consider the site-specific nature of CSOs and to determine the most cost-effective means of reducing pollutants and meeting CWA objectives and requirements
- Allow a phased approach for implementation of CSO controls considering a community's financial capability
- Review and revise, as appropriate, WQS and their implementation procedures when developing long-term CSO control plans to reflect the site-specific wet weather impacts of CSOs.

In addition, the CSO Control Policy clearly defines expectations for permittees, State WQS authorities, and NPDES permitting and enforcement authorities. These expectations include the following:

- Permittees should immediately implement the nine minimum controls (NMC), which are technology-based actions or measures designed to reduce CSOs and their effects on receiving water quality, as soon as possible but no later than January 1, 1997. More information on the NMC can be found in the EPA document *Combined Sewer Overflows: Guidance for Nine Minimum Controls* (EPA 832-B-95-003)
- Permittees should give priority to environmentally sensitive areas
- Permittees should develop long-term control plans (LTCPs) for controlling CSOs. A permittee may use one of two approaches: 1) demonstrate that its plan is adequate to meet the water quality-based requirements of the CWA ("demonstration approach"), or 2) implement a minimum level of treatment (e.g., primary clarification of at least 85 percent of the collected combined sewage flows) that is presumed to meet the water quality-based requirements of the CWA, unless data indicate otherwise ("presumption approach")
- WQS authorities should review and revise, as appropriate, State WQS during the CSO long-term planning process
- NPDES permitting authorities should consider the financial capability of permittees

when reviewing CSO control plans.

Table 1 illustrates the roles and responsibilities of permittees, NPDES permitting and enforcement authorities, and state WQS authorities.

In addition to these key elements and expectations, the CSO Control Policy also addresses important issues such as ongoing or completed CSO control projects, public participation, small communities and watershed planning.

III. PHASE ONE: THE RESIDENTIAL INDICATOR

The Residential Indicator measures the financial impact of the current and proposed WWT and CSO controls on residential users. Development of this indicator starts with the determination of the current and proposed WWT and CSO control costs per household (CPH). Second, the service area's CPH estimate and the median household income (MHI) are used to calculate the Residential Indicator. Finally, the Residential Indicator is compared to established financial impact ranges to determine whether CSO controls will produce a possible high, mid-range or low financial impact on the permittee's residential users. Worksheets are provided to aid in developing the Residential Indicator.

Developing CPH Estimate

The first step in developing the CPH is to determine the permittee's total WWT and CSO costs by adding together the current costs for existing wastewater treatment operations and the projected costs for any proposed WWT and CSO controls. The next step is to calculate the residential share of the total WWT and CSO costs. The final step is to calculate the CPH by dividing the residential share of total WWT and CSO costs by the number of households in the permittee's total wastewater service area.

Current WWT costs are defined as current annual wastewater operating and maintenance expenses (excluding depreciation) plus current annual debt service (principal and interest). This fairly represents cash expenses for current wastewater treatment operations. (Expenses for funded depreciation, capital replacement funds, or other types of capital reserve funds are not included in current WWT costs, because they represent a type of savings account rather than an actual operation and maintenance expense.)

Estimates of projected costs are made for any proposed WWT projects and the CSO controls. Any concerns about including specific proposed WWT projects or CSO controls in the projected costs, or the length of the planning period, should be discussed with the appropriate NPDES permitting and enforcement authorities. These costs are adjusted to current dollars (i.e., deflated). These include projected operation and maintenance expenses plus projected debt service costs for any proposed WWT and the CSO controls. The residential or household costs exclude the portion of expenses attributable to commercial, governmental and industrial wastewater discharges. The information and calculations used to develop the CPH and the Residential Indicator are presented in Worksheets 1 and 2 and their instructions.

- Other viable funding mechanisms and sources of financing.

These factors, may warrant phasing the CSO control implementation schedules in a manner other than would be prescribed by logical engineering sequencing and normal construction practices. This section illustrates how these considerations may affect scheduling and provides some general scheduling boundaries to aid all parties in negotiating the final implementation schedule for CSO controls.

Scheduling is first considered during the permittee's development of an LTCP. The LTCP should assess CSO control alternatives including estimated design and construction time requirements for various components of the CSO controls. In general, CSO controls should be implemented as expeditiously as possible.

The permittee should first develop a tentative implementation schedule based on logical engineering sequencing and normal construction practices. The permittee should complete a critical path analysis to identify the shortest implementation schedule that will achieve the control objectives identified in the LTCP (See guidance: *Combined Sewer Overflows-Guidance for Long-term Control Plan (EPA 832-13-95-002)*). As a result of negotiations with state NPDES and EPA authorities, it may be appropriate to modify the tentative design and construction schedule based on the environmental and financial considerations listed above.

In general, the final negotiated schedule for CSO controls would reflect two types of modifications to the engineering and construction schedule. First, where CSOs discharge to sensitive or significantly use-impaired water bodies, the final schedule would provide for expedited implementation of the controls for these discharges. Second, the schedules may be phased or extended to reflect the significance of various financial considerations, particularly financial capability. The number of years to implement the CSO controls would be negotiated between the permittee, EPA and state NPDES authorities.

The following discussion provides more information on environmental and financial considerations that affect implementation schedules for CSO controls.

TAB C



Report to Congress

Implementation and Enforcement of the Combined Sewer Overflow Control Policy



The discharge from a CSS at a point prior to the POTW...

CSSs were among the earliest sewers built in the United States and continued to be built until the middle of the twentieth century. During precipitation events (e.g., rainfall or snowmelt), the volume of sanitary wastewater and storm water runoff entering CSSs often exceeds conveyance capacity. Combined sewer systems are designed to overflow directly to surface waters when their design capacity is exceeded. Some CSOs occur infrequently; others, with every precipitation event. Because CSOs contain raw sewage and contribute pathogens, solids, debris, and toxic pollutants to receiving waters, CSOs can create serious public health and water quality concerns. CSOs have caused or contributed to beach closures, shellfish bed closures, contamination of drinking water supplies, and other environmental and public health problems.

What statutory and regulatory framework applies to CSOs?

The CWA establishes national goals and requirements for maintaining and restoring the nation's waters. As point sources, CSOs are subject to the technology- and water quality-based requirements of the CWA. They are not, however, subject to the secondary treatment standards that apply to POTWs.

In 1989, EPA initiated action to clarify requirements for CSOs through the publication of the National CSO Control Strategy (54 FR 37370, September 8, 1989). As a result, states developed—and EPA approved—state

CSO strategies. In 1992, a management advisory group to EPA recommended that the Agency begin a dialogue with key stakeholders to better define the CWA expectations for controlling CSOs. A workgroup of CSO stakeholders was assembled during the summer of 1992. The workgroup achieved a negotiated dialogue that led to agreement on many technical issues, but no consensus on a policy framework. Individuals from the workgroup representing stakeholder groups met in October 1992 and developed a framework document for CSO control that served as the basis for portions of the draft CSO Control Policy issued for public comment in January 1993. With extensive and documented stakeholder support, EPA issued the final CSO Control Policy on April 19, 1994 (59 FR 18688). When the CSO Control Policy was released, many stakeholders, key members of Congress, and EPA advocated that it be endorsed in the CWA to ensure its full implementation.

In the Consolidated Appropriations Act for Fiscal Year 2001, P.L. 106-554, Congress also stated that:

...each permit, order or decree issued pursuant to this Act after the date of enactment of this subsection for a discharge from a municipal combined storm and sanitary sewer shall conform to the CSO Control Policy signed by the Administrator on April 11, 1994.

In addition, Congress required preparation of a second report to Congress by December 2003. The second report will summarize the

extent of human health and environmental impacts from CSOs and sanitary sewer overflows (SSOs), quantify and characterize resources spent by municipalities to address these impacts, and evaluate the technologies used by municipalities to control overflows. EPA collected data during the preparation of this first report in anticipation of preparing the second report.

What is the CSO Control Policy?

The CSO Control Policy “represents a comprehensive national strategy to ensure that municipalities, permitting authorities, water quality standards authorities and the public engage in a comprehensive and coordinated effort to achieve cost effective CSO controls that ultimately meet appropriate health and environmental objectives.” In 1994, EPA estimated that the cost of CSO control, consistent with the CSO Control Policy, would be \$40 billion. In the *1996 Clean Water Needs Survey Report to Congress* (EPA, 1997b), EPA estimated the cost to be \$44.7 billion (1996 dollars).

The CSO Control Policy established four key principles to guide CSO planning decisions by municipalities, NPDES authorities, and water quality standards authorities:

1. Providing clear levels of control that would be presumed to meet appropriate health and environmental objectives.
2. Providing sufficient flexibility to municipalities, especially financially disadvantaged communities, to consider the site-specific nature of CSOs and to

determine the most cost-effective means of reducing pollutants and meeting CWA objectives and requirements.

3. Allowing a phased approach to implementation of CSO controls considering a community’s financial capability.
4. Reviewing and revising, as appropriate, water quality standards and their implementation procedures when developing CSO control plans to reflect the site-specific wet weather impacts of CSOs.

The CSO Control Policy expected that NPDES permits or other enforceable mechanisms would require CSO communities to implement nine minimum technology-based controls (the “nine minimum controls” or NMC) by January 1, 1997, and to develop CSO long-term control plans (LTCPs). The LTCP must assess a range of control options, including costs and benefits, and lead to selection of an alternative that would achieve appropriate water quality objectives and compliance with the CWA. Once the NPDES authority and CSO community reached agreement on an LTCP, the CSO community would design and construct the CSO controls as soon as practicable.

What methodology did EPA use for this Report to Congress?

The basic study approach for this report was to collect data and report on implementation and enforcement activities across EPA headquarters and the nine EPA regions and 32 states

known to have CSO communities within their jurisdictions. This entailed:

- Reviewing existing information in state and EPA permit and enforcement files, and federal data bases.
- Performing a literature search on policy, technology, and environmental data.
- Using modeling projections in certain cases.
- Conducting site visits to five EPA Regions and 16 states in which more than 90 percent of the nation's CSSs are located.
- Developing 15 CSO community case studies.
- Reviewing data from surveys conducted by the Association of Metropolitan Sewerage Agencies (AMSA) and the CSO Partnership.
- Organizing a stakeholder discussion of the preliminary issues and findings from the report at a meeting in Chicago, Illinois on July 12 and 13, 2001.

These efforts have allowed the Agency to compile a data base of all CSO permits, prepare profiles of all state CSO programs, and identify and document data gaps. The methodology for this Report to Congress recognizes that the Report to Congress required in 2003 will focus on the extent of environmental and human health impacts, resources spent, and an evaluation of technologies for CSO control.

Report Findings

What are the overall findings of this Report to Congress?

Progress has been made in implementing and enforcing CSO controls prior to, and as a result of, the 1994 CSO Control Policy. Cities that have made substantial progress and investments in CSO control are realizing public health and water quality benefits. The CSO Control Policy provides a sound approach to assess and implement cost effective CSO controls that meet appropriate environmental goals and objectives and achieve CWA compliance. It fosters and expects significant involvement of the public and the NPDES and water quality standards authorities.

Although federal, state, and municipal officials are involved in a broad range of activities to regulate and control CSOs, CSOs continue to pose a serious environmental and public health threat. Much remains to be done to fully realize the objectives of the CSO Control Policy and the CWA. The CSO Control Policy provides an appropriate framework for communities to control CSOs. EPA believes the codification of the CSO Control Policy through the 2000 amendments to the CWA will focus greater attention on implementation of the CSO Control Policy.

EPA believes a number of factors have affected the degree of implementation of the CSO Control Policy, including the lack of any statutory or regulatory endorsement of the CSO Control

Policy from 1994 until December 2000, and competing priorities at the federal, state and local level.

Below, EPA presents a summary of the key findings of this report, organized along four central themes. These themes are:

- A description of the status of CSOs in the United States.
- An overview of progress in implementing and enforcing the CSO Control Policy, examining key programmatic accomplishments at the federal and state levels, as well as municipal actions to implement the technology- and water quality-based controls.
- Early feedback on the nature and extent of environmental results stemming from CSO control.
- A review of remaining challenges in implementing and enforcing the CSO Control Policy.

What is the status of CSOs in the United States?

Today, there are 772 CSO communities with a total of 9,471 CSOs that are identified and regulated by 859 NPDES permits. Key attributes of the CSO universe include:

- CSSs are diverse, varying in configuration, size, age, number and location of outfalls. For example:
 - ▶ Prior to CSO control, San Francisco estimated that CSO discharges from 43 combined sewer outfalls occurred approximately 58 times per year, with a total annual overflow volume of 7.5 billion gallons, discharging into Islais Creek, San Francisco Bay, and the Pacific Ocean. As a result of its CSO control program, San Francisco has eliminated seven outfalls and reduced total annual overflow volume by more than 80 percent.
 - ▶ In Bremerton, WA, prior to initiation of CSO control, the average annual CSO volume was more than 120 million gallons from 16 CSOs discharging into Puget Sound. As part of its CSO control program, Bremerton has eliminated three outfalls and reduced total annual overflow volume by nearly 70 percent.
- Of the 772 CSO communities, approximately 30 percent have populations greater than 75,000, and approximately 30 percent are very small with total service populations of less than 10,000.
- EPA estimated in 1978 that there were as many as 1,300 CSO communities. Differences with today's 772 CSO communities are primarily attributable to the improved inventory of CSO



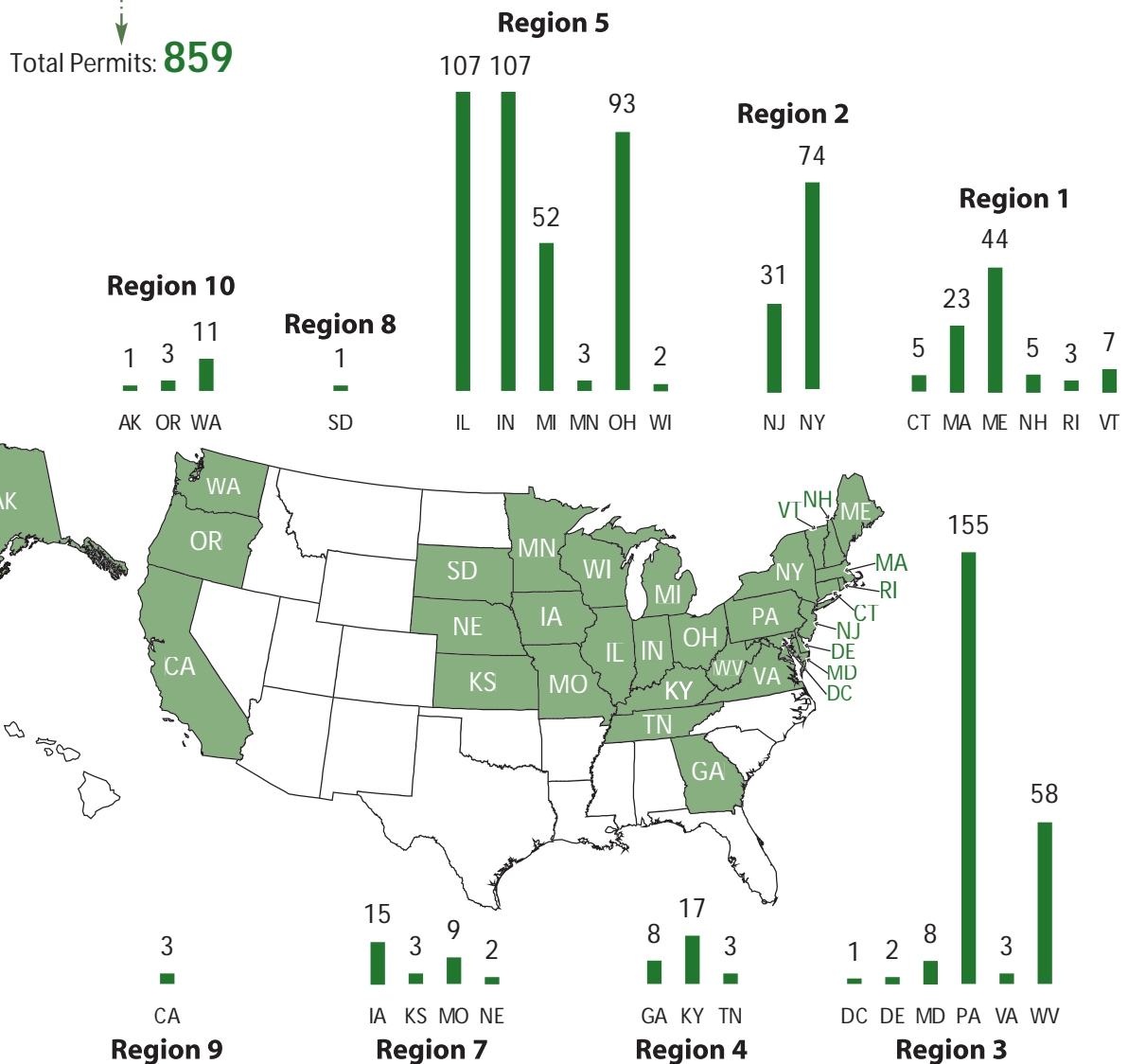
Since implementing CSO controls, San Francisco has reduced the number of CSO events and pollutant loads by an average of 88%.

Photo: Photodisc

Figure ES.1

Distribution of CSO Permits by Region and State

CSOs are found throughout the U.S., but are most heavily concentrated in the Northeast and Great Lakes regions.



permits developed for this report, completed sewer separation projects, and better differentiation between CSSs and separate sewer systems.

- National projections of annual CSO discharges are estimated at 1,260 billion gallons per year.
- Available data indicate the following distribution in receiving waters for CSOs: 43 percent to rivers, 38 percent to streams, five percent to oceans, estuaries and bays, two percent to ponds/lakes, and 12 percent to other waters (ditches, canals, unclassified waters).
- Uncontrolled CSOs continue to impair water quality in areas served by CSSs:
 - ▶ According to EPA's 1998 *National Water Quality Inventory*, CSOs are a source of impairment for 12 percent of assessed estuaries (in square miles) and two percent of assessed lakes (in shore miles) (EPA, 2000a).
 - ▶ According to a state-by-state report of impaired waters listed under CWA Section 303(d), less than one percent of the nearly 15,600 impaired water bodies in states with CSOs are impaired by CSOs. Further, approximately eight percent of the assessed water bodies are impaired by urban runoff (which may include CSOs). Appendix N provides a summary of the 303(d) listed waters.
- ▶ The Natural Resources Defense Council (NRDC) reported in its 2000 *Testing the Waters* report that sewage spills and overflows accounted for 2,230 beach closings and advisories in 2000. Sewage spills in the NRDC report include combined sewer overflows, sanitary sewer overflows, and breaks in sewer lines or septic systems (NRDC, 2001).
- Localized impacts of uncontrolled CSO discharges have been well documented by some communities. For example:
 - ▶ New York City reported that prior to CSO control, CSOs caused or contributed to shellfishing restrictions for more than 30,000 acres of shellfish beds. In 1998, New York City reported that improvements to sewage treatment infrastructure and operations, including CSO control, led to the lifting of shell-fishing restrictions.
 - ▶ The State of New Jersey reported that prior to CSO floatables control, CSOs caused or contributed to hundreds of days of ocean beach closings each year. The control of floatables in CSOs and storm water discharges has reduced the average annual days of ocean beach closings by more than 95 percent.



Fecal coliform concentrations in New York Harbor have declined dramatically from the early 1970s to the present. This improvement is largely attributable to abatement of raw sewage discharges through the construction and expansion of POTWs, elimination of illegal discharges, and reduction of CSOs.

Photo: Photodisc

What is the status of implementation and enforcement of the 1994 CSO Control Policy?

There has been definitive progress implementing and enforcing CSO controls prior to, and as a result of, the CSO Control Policy, resulting in demonstrable environmental progress in some communities where CSO controls have been instituted. EPA, states, and municipalities all have played important roles in advancing the CSO Control Policy.

EPA Progress

- EPA issued guidance, supported communication and outreach, and provided compliance assistance and some financial support for CSO control.
- EPA issued guidance on coordinating CSO LTCPs with water quality standards in 2001.
- EPA issued extensive technical and policy guidance documents to foster implementation of CSO controls dealing with the NMC, monitoring and modeling, financial capability, LTCPs, and permit writing and water quality standards reviews. EPA has sponsored and conducted more than 15 workshops and seminars on various aspects of implementation of the CSO Control Policy as well as other compliance assistance activities.
- Administrative and civil judicial actions have been used successfully together with permitting and compliance assistance activities to foster development and implementation

of CSO controls. Many of the CSO communities that have made the most progress to date, including several of the largest municipalities in the United States, have done so as the result of enforcement actions.

- EPA issued the *Compliance and Enforcement Strategy for Combined Sewer Overflows and Sanitary Sewer Overflows* in 2000.

State Progress

- Most states have made efforts to regulate and control CSOs. NPDES authorities have done extensive work placing conditions for CSO control in permits. In total, 94 percent of CSO communities are required to control CSOs, either through a permit or an enforceable order.
- All 32 states with CSSs developed CSO strategies in response to the National CSO Control Strategy. Most states have adopted the key provisions of the CSO Control Policy:
 - 27 require implementation of the NMC or a suite of best management practices (BMPs) that include or are analogous to the NMC.
 - 25 require development and implementation of LTCPs.
- Most CSO communities are required to implement BMP measures to mitigate CSO-related impacts:

- ▶ 94 percent of CSO permits require implementation of one or more BMPs.
 - ▶ 86 percent of CSO permits have requirements to implement the NMC or a set of BMPs that includes or is analogous to the NMC.
 - ▶ 6 percent of CSO permits do not require any BMPs.
- Imposition of permit or other enforceable requirements for more capital intensive CSO facility planning (e.g., sewer separation or underground storage) is less extensive:
 - ▶ 82 percent of CSO permits include enforceable requirements to develop and implement CSO facilities plan.
 - ▶ 65 percent of CSO permits contain requirements to develop and implement an LTCP.
 - ▶ 18 percent of CSO permits do not require CSO facilities planning.
- Several states have addressed the full range of programmatic components (e.g., guidance, compliance assistance, communications and information management, among others). Other states, principally those with fewer CSO communities, have dealt with CSOs on a site-specific basis.
- Many states have provided compliance assistance and most include compliance monitoring of CSOs in their NPDES inspections programs. Many state strategies have been updated since issuance of the CSO Control Policy in 1994. Yet, state programs vary widely in the approaches used to implement the CSO Control Policy.
- Most states have not developed separate, specific procedures for coordinating the review of water quality standards with LTCP development. Some states have approaches for considering water quality standards for CSO receiving waters. For example:
 - ▶ Indiana passed legislation providing a mechanism whereby CSO communities may apply for a temporary suspension of state water quality standards when certain criteria are met.
 - ▶ Maine passed legislation codifying standard procedures for providing variances for CSO receiving waters during the implementation of an approved LTCP.
 - ▶ Massachusetts added a series of refined uses to its state water quality standards use classification system to address CSO-impacted waters.
 - ▶ Illinois' water quality standards program framework presumes compliance with water quality standards upon the completed implementation of a CSO facility plan that meets the

- criteria for the state-derived presumption approach.
- Michigan rules allow the use of alternate design flows (i.e., alternate to 7Q10 low flows or 95-percent exceedance flows) when determining water quality based requirements for intermittent wet weather discharges such as treated CSOs.
 - New Hampshire has developed a surface water partial-use designation. A partial-use designation is made only if the community planning process and watershed planning efforts demonstrate that the allowance of minor CSO discharges is the most environmentally protective and cost-effective option available.
 - At least 16 states have brought enforcement actions that have included CSO violations. The enforcement actions have primarily been administrative actions, such as administrative compliance orders.
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- Municipal Progress**
- Most CSO communities have documented CSO control through some combination of the NMC and other best management practices.
 - 77 percent of CSO communities have submitted documentation of implementation of one or
 - more of the NMC to their NPDES authority.
 - 32 percent have submitted documentation of implementation of all NMC.
 - A smaller number of CSO communities have developed LTCPs.
 - 34 percent of CSO communities have submitted draft LTCPs to their NPDES authority.
 - 19 percent have had their LTCPs approved.
 - 17 percent have initiated implementation of LTCPs or other CSO facility plans.
 - 87 CSO communities have substantially completed implementation of their LTCPs or other CSO control programs.
 - CSO communities with LTCPs developed or approved are pursuing attainment of water quality standards in roughly equal measure under three approaches – demonstration, presumption, and a combination of the demonstration and presumption approaches.
 - LTCPs indicate that CSO communities are relying on a wide range of technologies to address CSOs including storage (e.g., tunnels), expanded treatment capacity, sewer separation, and improved conveyance. EPA will be examining the environmental

benefits of various CSO control technologies, including sewer separation, in the second Report to Congress in 2003.

What is the nature and extent of environmental accomplishments from CSO control?

EPA has seen some examples of demonstrable public health and environmental improvements in communities that have made substantial progress in controlling CSOs. The second Report to Congress, due in 2003, will focus on the environmental and human health impacts of CSOs and SSOs, the resources spent by CSO communities in controlling them, and an evaluation of CSO technologies. However, some early insights into the environmental gains from CSO controls are provided so that Congress has some sense of the return on federal, state and municipal investments. The following preliminary observations have been made:

- According to EPA's initial modeling estimates, CSO controls have resulted in an estimated 12 percent reduction of untreated CSO volume and pollutant loadings since 1994. EPA developed a preliminary model, GPRACSO, which estimates that since 1994, annual CSO volumes have decreased by 170 billion gallons per year. It also estimates that loadings of biochemical oxygen demand (BOD) have decreased by 125 million pounds per year.
- The number of CSO communities documenting environmental

results from CSO control is growing. EPA has identified a number of notable CSO efforts in which significant infrastructure has been completed and environmental improvements noted. For example:

- ▶ Prior to CSO control South Portland, Maine's 35 CSOs discharged approximately 100 million gallons of combined sewer overflows each year to the Fore River and Casco Bay. As of 2001, South Portland has spent nearly \$9 million on capital improvements in the CSS and invests another \$350,000 annually on CSO-related operations and maintenance activities. These expenditures have resulted in the elimination of 25 of their 35 CSOs, and an 80-percent reduction in the amount of untreated combined sewer overflows discharged from the CSS each year. The City of South Portland has been recognized by the Friends of Casco Bay for its efforts to control CSOs and the resulting positive impact on the Bay.
- ▶ Prior to CSO control, Saginaw, Michigan's 36 CSOs discharged nearly 3 billion gallons of combined sewage each year to the Saginaw River. As of 2001, Saginaw has spent nearly \$100 million on capital improvements in the CSS. These expenditures have resulted in the elimination of 20 of 36 CSOs, and a



The City of South Portland has been recognized by the Friends of Casco Bay (shown here) for its positive impact on the Bay.

Photo: Photodisc

75-percent reduction in the amount of combined sewage discharged from the CSS each year. The Saginaw River is now characterized by fishing periodicals as one of the top walleye fisheries in the country.

Key Program Challenges

In developing this Report to Congress, EPA identified several noteworthy challenges to CSO control in the United States. Each of these challenges, based on an overall synthesis of the report findings, is briefly described below.

Financial Challenges

When the CSO Control Policy was issued, EPA estimated the nationwide financial need to control CSOs, consistent with the CSO Control Policy, at \$40 billion (in 1992 dollars).

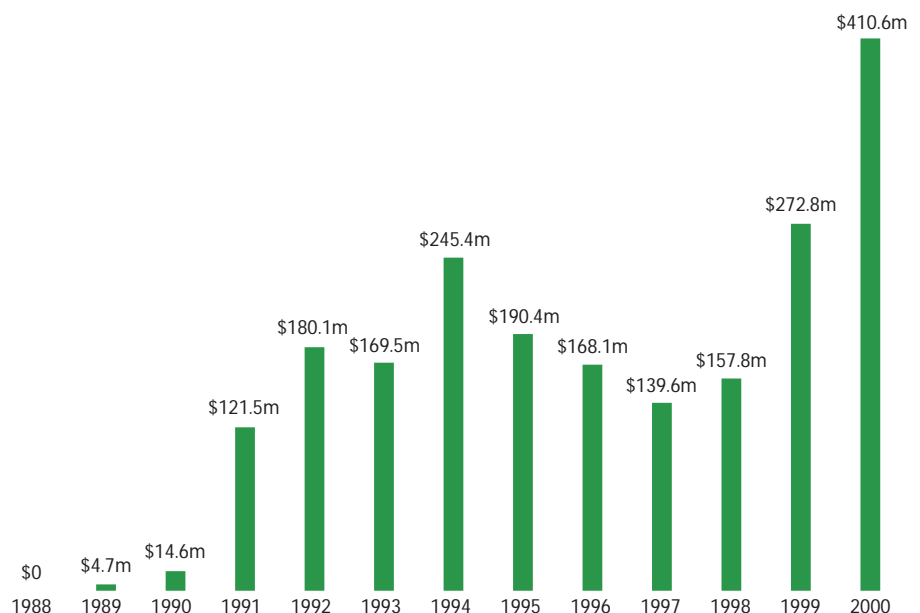
More recently, data from EPA's 1996 Needs Survey sets national CSO needs at \$44.7 billion (in 1996 dollars). CSO control costs will continue to be considerable, and EPA has received numerous requests from CSO communities for financial assistance, given mounting water and wastewater infrastructure costs and the resource-intensive nature of CSO controls. CSO LTCPs typically involve major infrastructure investments that must compete with other infrastructure needs. Respondents to the AMSA and CSO Partnership surveys reported that funding is the primary challenge in implementing LTCPs.

CSO communities are using a combination of local funding sources, Clean Water State Revolving Fund (SRF) loans, state grants and loans, and, in special cases, line item congressional appropriations to fund CSO controls. EPA does not have data on the total extent of CSO spending.

Figure ES.2

SRF Loans for CSO Projects, 1988—2000

SRF loans for CSO projects reached more than \$245 million in 1994 and began to rise again in 1998, reaching more than \$400 million in 2000. This suggests that funding for the implementation of CSO controls lagged several years behind the issuances of the 1989 Strategy and the 1994 Policy.



Use of SRF loans for CSO infrastructure continues to climb.

- State use of the SRF to fund CSO control projects has increased steadily since 1990. As shown in Figure ES.2, CSO loans in 2000 were the highest ever, accounting for \$411 million, or about 12 percent, of total SRF assistance. SRF loans for CSO control totaled \$2.08 billion from 1989 to 2000 (about 5 percent of the total CSO need). States with the highest SRF spending levels for CSO control (typically driven by a few large projects) were Illinois, Michigan, New York, and California.
- Congress has appropriated specific CSO infrastructure grants totaling over \$600 million for 32 CSO communities since FY 1992.

Congress has shown some support for additional funding for CSO control. The 2000 amendments to the CWA authorize EPA to provide grants to CSO communities, either directly or through states, for planning, design, and construction of CSO and sanitary sewer overflow (SSO) treatment. The amendments also require EPA to provide technical assistance and grants to POTWs for watershed-based management of CSOs, SSOs, and storm water discharges. The EPA Administration requested \$450 million for this program in its FY 2002 budget. To date, however, Congress has not appropriated funds for these grant programs.

Water Quality Standards Review

The CSO Control Policy anticipated that development of LTCPs would be coordinated with the review and revision, as appropriate, of water quality standards. Many reasons, including institutional barriers, exist for the lack of coordination in the LTCP development and water quality standards review processes. States cite public pressure to maintain their water quality standards, EPA requirements for development of a “use attainability analysis” (UAA) prior to revising a state water quality standard, and the lack of water quality monitoring data that could be used to justify water quality standards revisions. During EPA-sponsored listening sessions held in the spring of 1999, designed to support development of guidance for coordinating CSO LTCPs and water quality standards reviews, many participants expressed concern about the complexity of the process for revising water quality standards.

Among the changes in the 2000 amendments to the CWA, Congress added Section 402(q) to require issuance of guidance to facilitate the conduct of water quality and designated use reviews for CSO receiving waters by July 31, 2001. EPA prepared a draft guidance for public review and comment (66 FR 364, January 3, 2001) and issued the final guidance on August 2, 2001.

Information Management and Performance Measurement

This Report to Congress relied extensively on an assessment of CSO information that resides in EPA and

state files. EPA believes that this additional information on progress in implementing CSO controls and derived water quality benefits exists at the community level. EPA was hindered by the lack of a national data system for comprehensively evaluating the implementation and effectiveness of the CSO program, and by the lack of clear, national performance measures in place to assess the effectiveness of CSO control efforts on a national basis.

EPA Actions and Next Steps

What actions will EPA take to improve implementation and enforcement of the CSO Control Policy?

Despite significant efforts and progress by EPA, states, and CSO communities to implement CSO controls, more work remains to ensure that human health and the environment are adequately protected from CSOs. The 1994 CSO Control Policy provides a sound and appropriate framework for developing and implementing cost-effective CSO controls. With the codification of the CSO Control Policy in the 2000 amendments to the CWA, EPA will continue to work in partnership with the states to address remaining CSO issues. EPA will work aggressively with NPDES authorities, water quality standards authorities, and CSO communities to implement and enforce the CSO Control Policy. Based on the findings of this Report to Congress, EPA will pursue a number of activities to ensure the continued

effective implementation and enforcement of the CSO Control Policy.

Ensure That all CSOs are Appropriately Controlled.

- Implement the “shall conform” statutory mandate.
 - Begin efforts to implement new CWA Section 402(q)(1), which requires that future permits or other enforceable mechanisms for CSOs conform to the CSO Control Policy.
- Ensure all CSOs are covered by an NPDES permit or other enforceable mechanism.
 - Follow up with NPDES authorities to ensure that NPDES permits or other enforceable mechanisms are issued as soon as possible for those CSO communities that have not yet been required to control CSOs. EPA will also work with the states to ensure that permits and enforcement actions (e.g., orders, decrees) conform with the CSO Control Policy, as required by the 2000 amendments to the CWA.

Improve Implementation of the CSO Control Policy.

- Advocate CSO control on a watershed basis.
 - Continue efforts to focus protection of water quality on a watershed scale, and support development of LTCPs on a

watershed basis. EPA will continue efforts to encourage integration of wet weather programs, including support to facilitate wet weather pilot projects as designated in the 2000 CWA amendments.

- Work with states to speed the water quality standards review and revision process.

- Continue to work with states, communities, and constituency groups on coordinating the review and revision of water quality standards with development of LTCPs. EPA will establish a tracking system for water quality standards reviews on CSO receiving waters. EPA will also assess the need for additional guidance and tools to facilitate the water quality standards review process for all sources, including CSOs.

- Strengthen CSO information management.

- Ensure that the Office of Water and the Office of Enforcement and Compliance Assurance coordinate information management and performance measurement activities to demonstrate the environmental outcomes and benefits of CSO control.

- Improve compliance assistance and enforcement.

- CSOs will continue to be a national compliance and enforcement priority in fiscal

years 2002 and 2003. EPA will work closely with NPDES authorities to target enforcement actions, where appropriate, to ensure compliance with the CSO requirements in NPDES permits or other enforceable mechanisms. In addition, EPA will develop and promote compliance assistance tools.

Initiate Efforts for 2003 Report to Congress.

- Initiate efforts to define the scope and methodology for the second Report to Congress on efforts related to CSO controls. By December 2003, EPA is required to summarize the extent of human health and environmental impacts caused by CSOs and SSOs, report on the resources spent by municipalities to address these impacts, and evaluate the technologies used, including whether sewer separation is environmentally preferred for all situations. EPA will build on CSO data collected for this report and develop a methodology for addressing the challenges of collecting and analyzing SSO data.

TAB D

United States
Environmental Protection
Agency

Office of Water
(4203M)

EPA-833-R-01-002
JULY 31, 2001



GUIDANCE:

COORDINATING CSO LONG-TERM PLANNING

WITH

WATER QUALITY STANDARDS REVIEWS

FOREWORD

EPA issued the Combined Sewer Overflow (CSO) Control Policy in April 1994 (59 FR 18688). To date, EPA has released seven guidance documents and worked with stakeholders to foster implementation of the Policy. EPA continues to affirm the Policy's key themes, such as providing clear levels of control, using a flexible permitting approach, allowing phased implementation of CSO controls based on a community's financial capability, and reviewing and revising, as appropriate, water quality standards. In practice, many challenges remain, and implementation of the Policy has not met some initial expectations.

The CSO Policy calls for the development of a long-term control plan (LTCP) which includes measures that provide for compliance with the Clean Water Act, including attainment of water quality standards. LTCP development that is consistent with the CSO Policy is key to the success of local CSO control efforts. The CSO Policy provides that “[d]evelopment of the long-term plan should be coordinated with the review and appropriate revision of water quality standards (WQS) and implementation procedures on CSO-impacted receiving waters to ensure that the long-term controls will be sufficient to meet water quality standards” (59 FR 18694). In the seven years since EPA issued the CSO Control Policy, implementation of this principle has not progressed as quickly as expected.

Given local resource constraints, CSO communities need clear guidance on how they should implement the CSO control and other wet weather water pollution control programs to attain water quality standards. Water quality standards reviews are an important step in integrating the development and implementation of affordable, well-designed and operated CSO control programs with the requirements of the Clean Water Act (CWA). However, the Agency recognizes that State and Interstate Water Pollution Control Directors will need to set priorities for water quality standards reviews based on a number of factors, including court-mandated total maximum daily load (TMDL) analyses. EPA plans to actively participate in and facilitate the process wherever possible.

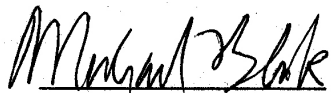
As part of EPA's FY 1999 Appropriation, Congress directed EPA to develop guidance on the conduct of water quality standards and designated use reviews for CSO receiving waters. Congress further urged EPA to provide technical and financial assistance to states and EPA Regions to conduct these reviews. In response, EPA hosted three stakeholder listening sessions in the spring of 1999 and an experts workshop on September 24, 1999. The purpose of these meetings was to obtain participants' views on the impediments to implementing the water quality-based provisions in the CSO Policy, and actions that EPA should take. In December 2000, Congress enacted CWA amendment 402(q)(2) requiring publication of the guidance by July 31, 2001, after public review and comment. The *Guidance: Coordinating CSO Long-Term Planning with Water Quality Standards Reviews* addresses many of the stakeholder concerns.

The objective of this guidance is to lay a strong foundation for integrating CSO long-term control planning with water quality standards reviews. Agreement among CSO communities, states, and EPA on the data to be collected and the analyses to be conducted to support the long-

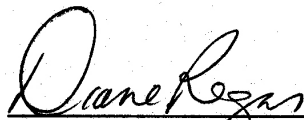
term control plan development and water quality standards reviews can facilitate water quality standards reviews for CSO-receiving waters.

The guidance describes the process for integrating LTCP development and implementation with the water quality standards review. This process is the essence of EPA's commitment to facilitating the review and revision, as appropriate, of water quality standards for CSO-impacted receiving waters. Integrating CSO long-term control planning with water quality standards reviews requires greater coordination among CSO communities, states, EPA, and the public. Although this coordination is an intensive process, it provides greater assurance that CSO communities will implement affordable CSO control programs that support the attainment of appropriate water quality standards.

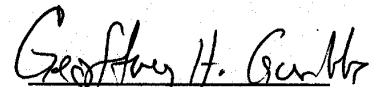
As outlined in the guidance, EPA will continue to implement the CSO Control Policy through its existing statutory and regulatory authorities. The principal mechanisms are the National Pollutant Discharge Elimination System (NPDES) permit program and the water quality standards program. NPDES authorities are and will continue to be responsible for implementing the CSO Control Policy. EPA commits to working with State and Interstate Water Pollution Control Directors to implement all aspects of the CSO Control Policy, including the integration of LTCP development with the review and revision, as appropriate, of water quality standards.



Michael B. Cook, Director
Office of Wastewater Management
Date: 7/31/01



Diane C. Regas
Acting Assistant Administrator
Date: 8/2/01



Geoffrey H. Grubbs, Director
Office of Science and Technology
Date: 7/31/01

determine that the recreational uses are not fully attained all the time, and may refine the recreational uses to reflect the maximum level of control from a well-designed and operated control program that does not cause substantial and widespread economic and social impact. As discussed in Step 4, other revisions applicable to recreation may include:

- ! Applying the standard at the point of contact rather than at the end-of-pipe.
- ! Creating subclasses of the current designated use to recognize intermittent exceedances of bacteriological criteria.
- ! Segmenting the water body to preserve the designated use in areas where it actually occurs.

Prior to submitting a proposed water quality standard revision to EPA for review, EPA's water quality standards regulations require the state to hold a public hearing and request comment on the proposed revisions. This public hearing is an opportunity for the CSO community to be actively involved and to help explain the proposed CSO control alternatives and their relationship to the proposed water quality standards revision. This hearing also affords the public an opportunity to have input on the selection of the final CSO program at a key decision point, given the LTCP's relationship to the attainment of water quality standards.

EPA's water quality standards regulations at 40 CFR 131.21(b) require that any analyses, including the UAA, used in support of the water quality standard revision be made available for public review and comment at the time the revisions are proposed. Subsequent to public review and comment and appropriate revision, the state submits the revision, supporting analyses and public comments to EPA for review.

Before the revisions in the water quality standards may be used for CWA programs, including TMDLs and NPDES permits, EPA must approve the state-adopted water quality standards revision (see 65 FR 24641, April 27, 2000). Again, where there has been close coordination and cooperation, the approval process is more likely to proceed expeditiously. EPA is expected to approve a state's new or revised standard within 60 days, or disapprove within 90 days.

Step 8 - Revise LTCP, as appropriate. If the water quality standards decisions differ from those that the CSO community anticipated, or if the previously implemented controls have not performed as predicted, the community would have to revise the draft LTCP.

The CSO community should work closely with the regulatory authorities to confirm the project implementation schedule for the CSO control program. Key milestones include, for example, design completion, attainment of funding, construction milestones, completion dates, and implementation of post-construction monitoring. Guidance on these issues is available in *Combined Sewer Overflows - Guidance for Long-Term Control Plan*.

TAB E



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 19 1998

MEMORANDUM

SUBJECT: Implementation of the CSO Control Policy

FROM: Robert Perciasepe
Assistant Administrator
Office of Water

Steven A. Herman
Assistant Administrator
Office of Enforcement and Compliance Assurance

TO: Water Management Division Directors, Regions 1-10
Regional Counsels, Regions 1-10
State Directors

The purpose of this memorandum is to discuss implementation of the Combined Sewer Overflow Control Policy (CSO Policy) and identify areas where heightened efforts are necessary.

The Environmental Protection Agency (EPA) published the CSO Policy on April 19, 1994 (59 FR 18688), following a negotiated policy dialogue among representatives from States, environmental groups, municipal organizations, and EPA. The CSO Policy provides for a phased process to bring communities with combined sewer systems into compliance with the technology-based and water quality-based requirements of the Clean Water Act. To date, EPA has released six guidance documents and continues to work with stakeholders to foster implementation of the Policy.

The CSO Policy is now four years old and continues to be recognized as an example of innovation and good government. In principle, EPA and its stakeholders continue to affirm the Policy's key themes, such as permitting flexibility, stakeholder coordination and public participation, financial capability as a factor affecting implementation schedules, and examination of water quality standards as appropriate. In practice, however, many challenges remain, and implementation of the Policy has not met some initial expectations.

Nine Minimum Controls. The CSO Policy's first key milestone was implementation of the nine minimum controls by January 1, 1997. The nine minimum controls are measures that can reduce CSOs and their effects on receiving water quality without requiring significant engineering studies, construction activity, or financial investment. In a November 18, 1996, memorandum to the Regional and State Directors, we communicated the importance of meeting this deadline.



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Under the CSO Policy, implementation of the nine minimum controls should become an enforceable obligation through inclusion in an appropriate enforceable mechanism. The Policy describes how the nine minimum controls and other CSO requirements are to be included in National Pollutant Discharge Elimination System (NPDES) permits (renewed permits or reopened and reissued permits) or administrative orders. The November 18, 1996, memorandum reminded NPDES authorities that the approach identified in the CSO Policy — not to seek civil penalties for past CSO violations — would not apply unless the permittee has no discharges during dry weather and meets the objectives and schedules of the CSO Policy, including the January 1, 1997, deadline for implementing the nine minimum controls. By now, every CSO community should be implementing the nine minimum controls, and most NPDES permits should contain measurable, enforceable, and specific conditions requiring implementation of the nine minimum controls, including submittal of appropriate documentation.

Although the January 1, 1997, implementation deadline has passed, our best information from EPA Regions and States indicates that only about 52 percent of CSO communities are currently implementing the nine minimum controls. Approximately another 25 percent have not yet implemented the nine minimum controls but are under an enforceable requirement to do so in the future.

There are several reasons for this. Many communities' permits have not yet been reissued to include the nine minimum controls, and permittees are reluctant to implement the nine minimum controls in the absence of an enforceable requirement. Some States have focused their efforts on requiring long-term control plans or have resisted using enforcement mechanisms as implementation tools. We believe, however, that the nine minimum controls are an essential element of any community's CSO program and that full implementation of the nine minimum controls is crucial to the success of the CSO Policy. The goal of 100 percent implementation remains a high Agency priority. We will continue to track implementation of the nine minimum controls and coordinate with EPA and State enforcement authorities as necessary to foster compliance.

We also stress the need for communities to provide appropriate documentation that they have implemented the nine minimum controls and for NPDES authorities to review this information thoughtfully. To date, although 52 percent of CSO communities have implemented the nine minimum controls, approximately 42 percent have submitted documentation. The Agency does not believe documentation is simply a "paperwork" exercise. Rather, documentation describes the community's comprehensive effort to use the nine minimum controls to reduce the frequency, volume, and impacts of CSOs. Without strong documentation, a CSO community and its permitting authority cannot meaningfully assess the effectiveness of the nine minimum controls and the extent to which additional controls, if any, may be needed.

Long-Term Control Plans. The CSO Policy calls for initial ("Phase I") NPDES permits to require development of a long-term CSO control plan as soon as practicable, but generally within two years after issuance of the permit, Section 308 information request, or enforcement action requiring a plan. The long-term control plan should include measures that provide for compliance with the technology-based and water quality-based requirements of the Clean Water Act, including attainment of water quality standards under either the "presumption approach" or the "demonstration approach." The subsequent ("Phase II") permit should require immediate implementation of the control measures in the long-term control plan. The long-term control plan should include a fixed-date implementation schedule. Requirements for expeditious

implementation of the long-term control plan should be placed in an appropriate enforceable mechanism.

Regions and States indicate that approximately 33 percent of CSO communities are moving ahead to implement long-term CSO controls. Approximately another 28 percent are subject to an enforceable requirement to develop a long-term CSO control plan. We do not have adequate information to determine how much of the current CSO planning and control activity is being undertaken consistent with the CSO Policy.

Long-term planning consistent with the CSO Policy is key to the success of local CSO control efforts. We urge Regional and State authorities to work actively with permittees to ensure that long-term control plans address important elements of the CSO Policy such as characterization, monitoring, and modeling of the combined sewer system and receiving water; public participation; evaluation of the cost and performance of alternatives; and coordination with State water quality standards authorities and NPDES authorities. EPA Headquarters will continue to track progress in the development of long-term control plans consistent with the CSO Policy.

Water Quality Standards (WQS). Long-term CSO control plans must ensure that both the technology-based and water quality-based requirements of the CWA are met. With respect to water quality-based requirements, the CSO Policy provides that “[d]evelopment of the long-term plan should be coordinated with the review and appropriate revision of WQS and implementation procedures on CSO-impacted receiving waters to ensure that the long-term controls will be sufficient to meet water quality standards” (59 FR 18694). The CSO Policy places a high priority on eliminating or redirecting CSOs that discharge to sensitive areas such as beach areas and shellfish beds. Remaining overflows must neither cause nor contribute to a violation of WQS.

In locations where uses have been designated without consideration for the wet weather conditions of urban streams, it is appropriate to evaluate the attainability of WQS. The CSO Policy recognizes the States’ flexibility to review their WQS and encourages them to define recreational and aquatic life uses more explicitly where appropriate. Such refinements could define, for example, seasonal conditions or a particular size storm event when primary contact recreation would not occur. In making such adjustments to uses, however, States must ensure that downstream uses are protected and that the use is fully protected during other seasons or after the storm event has passed. Furthermore, a use attainability analysis would be required in such cases, since use attainability analyses are required prior to the removal of a designated use or the modification of a use to one requiring less stringent criteria. Such a structured scientific analysis is an appropriate mechanism for determining the attainability of a use. In any case, if a State has a reasonable basis to determine that the current designated use could be attained after implementation of the technology-based controls of the CWA, then the use could not be removed.

We strongly encourage Regions and States to work with permittees to ensure that long-term plans are developed consistent with WQS. We also encourage greater coordination among EPA, States, and permittees in refining designated uses as appropriate in CSO-impacted receiving waters. In many cases the permittee’s development of a long-term control plan, and the State’s review and revision of WQS, will occur concurrently and interdependently. Site-specific data collected as part of the development of the long-term control plan and data from watershed analyses should assist States in evaluating the adequacy of the long-term control plan to

contribute to the attainment of WQS. Such data will also provide important information necessary for determining whether a use is attainable and, where the designated use is not attainable, the appropriateness of a variance or other revision to the applicable WQS. Variances may be appropriate, in limited circumstances on CSO-impacted waters, where the State is uncertain as to whether the WQS can be attained and time is needed for the State to conduct additional analyses on the attainability of the WQS.

Measuring Program Performance. The CSO Policy continues to have a high level of support within EPA and among stakeholder groups. With visibility, of course, comes scrutiny. Understandably, the Policy continues to provoke questions about how well a flexible approach can address a costly and complex environmental issue. In addition, implementation of the CSO Policy is occurring amid public demands that investments in pollution control yield tangible environmental benefits.

Under the Government Performance and Results Act (GPRA), EPA developed a pilot performance plan to track the implementation status of the CSO Policy. Program indicators developed under the performance plan include progress in implementation of the nine minimum controls, development of long-term plans, and reduction in the frequency, volume, and adverse water quality impacts of CSOs. The data base developed to implement the performance plan will continue to provide useful insights into the status of CSO Policy implementation and will be a useful program management tool.

Accountability for the CSO Program is also embodied in the Agency's Strategic Plan under GPRA for the water program. Objectives to be attained by 2005 currently include a 30 percent reduction from 1992 levels in annual point source loadings from CSOs, publicly owned treatment works, and industrial sources. EPA's FY 1998 goal is for 80 percent of CSO communities' permits to be issued consistent with the CSO Policy; for FY 1999, the goal is 100 percent consistency.

We also encourage you to support efforts by CSO communities to develop other, locally defined, indicators of progress in controlling CSOs. Locally defined measures of success can provide meaningful incentives to select and implement CSO controls that not only meet CWA requirements but are cost-effective, tailored to local water quality objectives, and likely to yield results that the public, and specifically rate-payers, will support.

In closing, we urge you to help make the CSO Policy a success. We remind you that implementation of the CSO Policy continues to be a high priority for the Water Program and is among the top program priorities for the Office of Regulatory Enforcement in FY 1998. It is essential that all CSO communities be moving aggressively toward two important goals: full implementation of the nine minimum controls and coordination with NPDES and WQS authorities in the development and implementation of long-term control plans. We welcome continued dialogue among EPA Headquarters, Regional, and State permitting and enforcement authorities on removing any identified impediments to achieving these goals.

If you have questions concerning this memorandum, please contact either Ross Brennan of the Office of Wastewater Management at (202) 260-6928, or John Lyon of the Office of Regulatory Enforcement at (202) 564-4051.

TAB F

United States
Environmental Protection
Agency

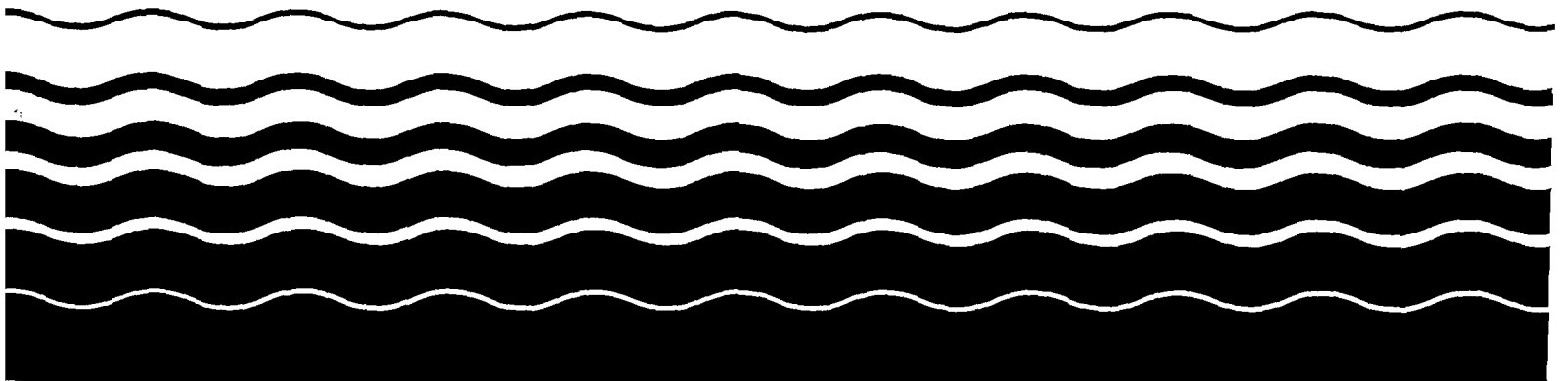
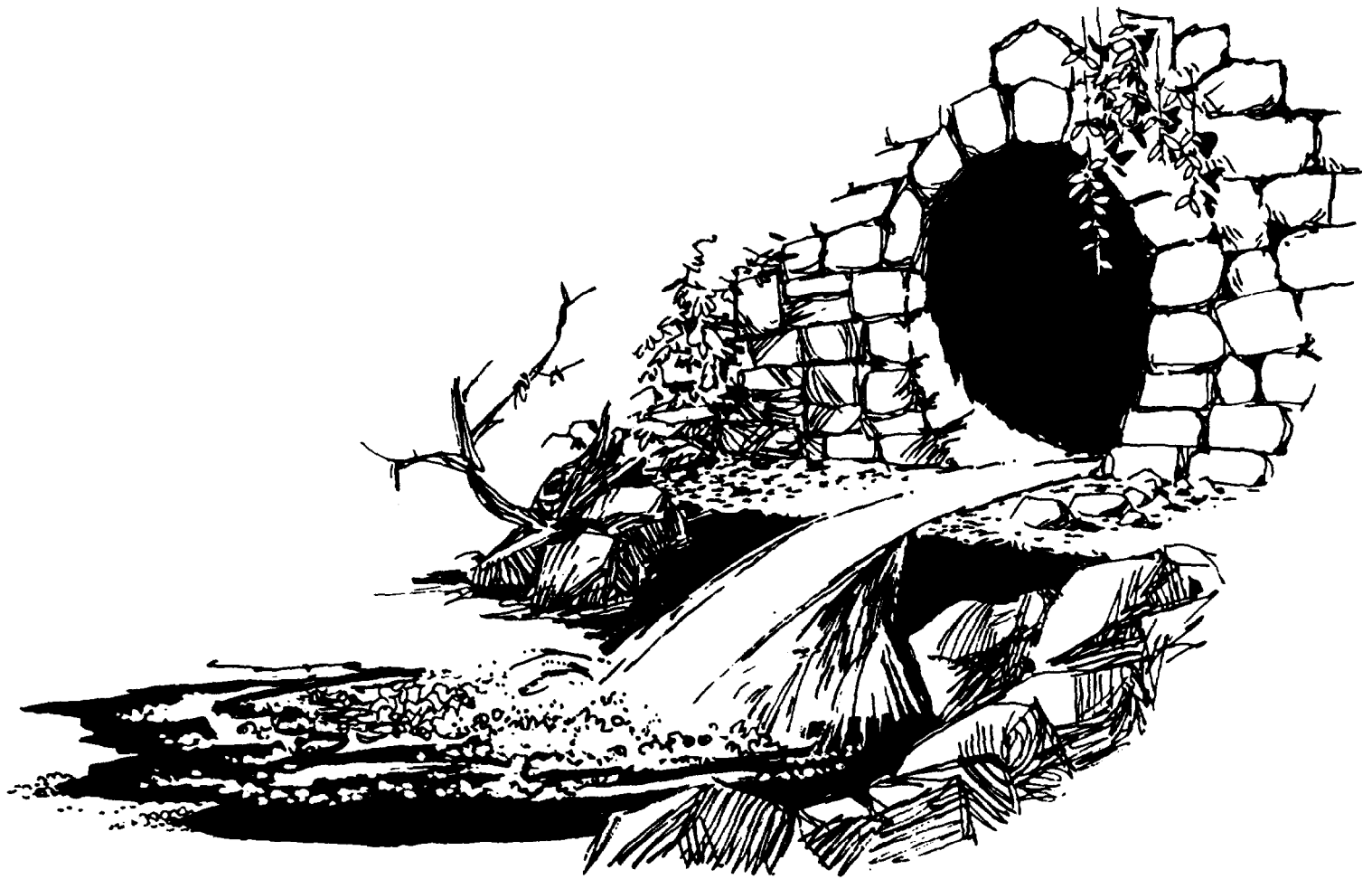
Office Of Water
(4204)

EPA 832-B-95-002
September 1995

EPA

Combined Sewer Overflows

Guidance For Long-Term Control Plan



as outlined in Chapter 2) to collect long-term data for comparisons. Using this approach, program progress in addressing pollution problems and preventing further water quality degradation can be determined. Monitoring plan components (e.g., a map of monitoring stations, a record of the frequency of sampling at each station, a parameter list, a QA/QC project work plan) should be identified in a work plan similar to that outlined for sampling in Chapter 2.

Collecting sufficient data to clearly define the effectiveness of CSO controls is challenging sometimes for various reasons, including the variability of rainfall and CSOs and the difficulty in specifically identifying the effect of a particular control on a receiving water. This type of monitoring program should be developed with caution because of the importance associated with demonstrating the effectiveness of CSO controls on receiving water quality.

4.7 RE-EVALUATION AND UPDATE

The post-construction compliance monitoring program is intended to *"...verify compliance with water quality standards and protection of designated uses as well as to ascertain the effectiveness of CSO controls"* (II.C.9). The CSO Control Policy provides that *"...the selected controls should be designed to allow cost effective expansion or cost effective retrofitting if additional controls are subsequently determined to be necessary to meet WQS, including existing and designated uses"* (II.C). If the implemented controls do not result in attainment of WQS, including designated use, a municipality should evaluate the current system's operating practices before considering structural modifications. If correct operating practices are confirmed, the re-evaluation might indicate that a different operating strategy should be considered, such as bypassing flow at a different flow rate. In some cases, real-time control system operating software might have to be modified or weir elevations changed.

If post-construction compliance monitoring indicates that existing WQS are not being met, the data generated can be used to identify the additional CSO controls necessary to achieve WQS. This can include a repeat of the WQS review conducted earlier in the planning process. The CSO Control Policy provides that *"...if adequately supported with data and analyses,*

Chapter 4

Selection and Implementation of the Long Term Plan

Agency regulations and guidance provide states with the flexibility to adapt their WQS, and implementation procedures to reflect site-specific conditions including those related to CSOs....In addition, the regulations...specify when and how a designated use may be modified" (III.B). In accordance with the CSO Control Policy, however, expansion or retrofitting of a CSO control facility might ultimately be required.